Analyzing the Connection between Sexual Minority Status and Suicide Outcomes: Defining the Role of Socioeconomic Status

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Abstract

While recent history has seen significant progress in the legal and social acceptance of non-heterosexual people in the United States, these changes have not necessarily resulted in improved health outcomes for all sexual minorities. The bounds of heterosexism and social prejudice against sexual minorities, and the normalized status of heterosexual orientations, have continued to result in disparate mental and physical health outcomes as sexual and gender minorities remain confined to the will of the heterosexual and cisgender majority. Research has identified sexual minority individuals as being at a heightened risk for mental health problems such as medically diagnosed mental disorders, deliberate self-harm, and suicidal ideation as compared to their strictly heterosexual counterparts. Furthermore, the association between mental health and suicidal ideation is more pronounced among sexual minority individuals, suggesting more significant health consequences of poor mental health for this population. Extant research has identified the powerful causal role of socioeconomic status in explaining disparities in suicide outcomes, but whether and to what extent this association is evident for sexual minority individuals has yet to be examined. Drawing on fundamental cause theory and the minority stress process model, I consider alternative hypotheses regarding the association between socioeconomic status and suicide outcomes of sexual minority individuals as compared to the sexual majority. To do so, I draw upon Wave IV (n = 15,701) of the National Longitudinal Study of Adolescent to Adult Health (Add Health) and logistic regression to assess whether and how the association between socioeconomic resources and suicidal ideation and suicidal behavior varies for sexual minority individuals compared to heterosexual individuals. Sexual minority status and socioeconomic status were associated with suicidal ideation and attempt, though the effects of SMS outweighed SES in effect. The results of this research contribute to health disparities literature by providing insight into factors preventative of suicidal outcomes, particularly for sexual minority individuals. Exploring this intersection might prompt additional research informing the ways in which structural and social intervention can address such group-level disparity.

Key words and phrases: sexual minority status, suicide, socioeconomic status, minority stress

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Introduction

An expanding body of literature has demonstrated LGBTQ mental health as an area of significant disparity (Institute of Medicine 2011). Previous research has shown that socioeconomic status mediates the effect of stressful life events on mental health (Maisel and Karney 2012) and is generally protective of an individual's risk of suicide (Pirkis et al. 2017), though considerably less literature has examined how the weight of these effects are distributed across a measure of sexual orientation. Other research has found sexual minority individuals to be at heightened risk of mental health problems, such as mental disorder, suicidal ideation, and deliberate self-harm than their strictly heterosexual counterparts (King et al. 2008; Fergusson et al. 2005; Sandfort et al. 2001). The association between mental health and suicidal ideation is stronger for lesbian, gay, and bisexual individuals (Fergusson et al. 2005) and rates of both suicidal ideation and suicidal behavior are consistently shown to be disparate for these groups (Haas et al. 2010; Russel 2003; Silenzio et al. 2007).

The following analysis aims to quantify the effects of sexual minority status and socioeconomic resource on suicide outcomes, focusing on both suicidal ideation and attempted suicide, and utilizes data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), a nationally representative sample of adolescents followed for five waves from 1994-1995 to 2016-2018. The following research questions are posed:

1. What relationships does sexual minority status have with suicidal ideation and attempted suicide?
2. Is socioeconomic status protective against suicidal ideation or attempted suicide for sexual minority individuals?

Sexual Minority Stress

Sexual minority experiences of stigma and discrimination are linked to disparities in mental health outcomes at both the structural and interpersonal level (Walch et al. 2016) and greater exposure to experiences of discrimination is associated with greater psychological distress (Institute of Medicine 2011). The minority stress process model (Meyer 2003) links personal experiences with stigma and discrimination to health disparities through a set of stressors applicable to members of the minority group. The model suggests a distal-proximal conceptualization of minority stress due to the relevance of external social conditions on stigma and discrimination toward minority identities (Meyer 1995; Meyer 2003). In the case of lesbian, gay, and bisexual individuals, experiences of homophobic or heterosexist discrimination have a direct impact on mental health and quality of life (Sutter and Perrin 2016; Meyer 2003).

Within the model these personal experiences of discrimination or violence would classify as distal minority stressors, as they exist independently of personal identification with the sexual minority and regardless of how an individual may perceive themself. More proximal minority stressors include concealment of identity, expectations of rejection, and internalized homophobia, all of which are characterized by their relevance to self-identity (Meyer 1995; Meyer 2003). Though there are challenges to measuring the aforementioned proximal factors such as internalized homophobia (Mayfield 2001) research has shown a significant association between internalized homophobia and depression, anxiety, substance use and suicidal ideation (Williamson 2000) particularly for gay men and lesbian women (Hammelman 1993). When childhood socialization and regulation leave discrepancy between individual values and social norms this incongruence can lead to internal conflict (Pearlin 1993).

Other studies have analyzed the effects of sexual minority stress on suicidal ideation and suicide attempt. Several population-bases studies have concluded that there is an association between sexual minority status and risk of suicidality (King et al. 2008; Fergusson et al. 2005; Sandfort et al. 2001). In a review of existing research, Russel (2003) highlights that developing awareness of sexual minority status is particularly stressful due to potential or perceived strain on significant personal relationships. Fergusson and colleagues (2005) found that the extent of risk of mental health problems varies dependent upon the extent of same-sex participation and identification. Sutter and Perrin (2016) find that sexual minority discrimination exerted a significant indirect effect on suicidal ideation through its effects on mental health. However, some studies (Pirkis et al. 2017; Maisel and Karney 2012) have examined the mediating effects of socioeconomic status on the association between sexual minority status and suicidal ideation, and the general protectiveness of SES on outcomes such as suicidal behavior, suicide attempt, and death by suicide.

Given the identified associations between sexual minority orientation and stress, stress and mental health outcomes, and mental health and suicidal ideation, the minority stress model might therefore predict that sexual minority individuals are at a heightened risk for suicidal ideation and attempt—though the respective associations between both of these indicators and completion of lethal self-injury are likely more spurious (Mościcki 1994).

Socioeconomic Status (SES) as Context for Poor Health

Research in medical sociology has long examined the complex interplay between structural and agentic influences on health outcomes at the individual and group levels. Much literature has indicated that larger social structures may have significant effect on the individual.

Cockerham (2013:28) explains that, from this theoretical perspective, society itself constitutes another reality and thus has a strong capacity to influence individual behavior.

There is extensive literature analyzing the association of various SES indicators with disparate outcomes of physical and mental health. Link and Phelan (1995) propose that socioeconomic condition be a fundamental cause of disease. That is, socioeconomic status (SES) is related to multiple disease outcomes, operates through multiple pathways of risk, involves access to resources that can be used to avoid risks or to minimize the consequences of disease, and the association between it and health are reproduced by new mechanisms over time. SES embodies multiple social resources such as money, knowledge, prestige, power, and beneficial social connections (Link and Phelan 1995). While these resources are not indicative of a structural predetermination for health, each is necessary for the attainment and protection of individual health advantages (Phelan et al. 2004; 2010).

Other literature has examined poor health and the ways in which it might be distributed across the social gradient of SES and class. Marmot (2004) found a lower position within the gradient to be associated with increased risk of heart disease, stroke, lung disease, disease of the digestive track, kidney disease, HIV-related disease, tuberculosis, suicide, and other accidental and violent deaths. In addition, the strength of other related factors such as self-esteem, control over one's environment, social capital, and social support were found to be correlated with position in the social gradient (Marmot 2004). Decreases in income, levels of personal control, and social support were found to be associated with poorer ratings of health (Kosteniuk and Dickinson 2003) and decreases in SES specifically were associated with worse self-rated health and frequent exposure to stress (Orpana and Lemyre 2004).

The Intersection of SES, Minority Stress, & Suicide

Several studies have begun to examine the influence of socioeconomic status on proximal minority stress processes such as concealment, and internalized homophobia. Extant research largely negates bivariate association between "outness" regarding sexual orientation and SES indicators: individual income (Barrett, Pollack, and Tilden 2002) occupational status (D'Augelli, Grossman, and Starks 2005) or education (Gates 2010). However, Schrimshaw et al. (2013) found in their analysis of sexual orientation disclosure for non-gay identifying men with bisexual behavior that higher-income bisexual men were more likely than their lower-income counterparts to both conceal and disclose their sexual orientation, proposing that these individuals perceive themselves as having "more to lose" while also having exposure to more affirming or receptive environments. Association between SES and internalized homophobia is less documented in the literature, likely an effect of measurement challenges (Mayfield 2001). In a large prospective study of gay and bisexual men, Herrick et al. (2013) found internalized homophobia to have an inverse association with level of education. Henrickson (2008) used personal self-satisfaction with lesbian, gay, or bisexual orientation as a proxy measure for internalized homophobia and found that participants with higher levels of education reported more satisfaction than lower-education participants. McGarrity (2014) concludes that SES is contextually relevant when analyzing minority stress and health for LGB individuals, as low-SES individuals are more vulnerable to the negative effects of discrimination.

Over the past few decades, many studies have contributed to the literature documenting the effects of socioeconomic status on suicide outcomes. In a comprehensive review, Burrows and Laflamme (2010) emphasize that while socioeconomic disadvantage is often found to be associated with higher rates of attempted suicide, the relationship is not always consistent.

Individuals with low levels of education are found to be overrepresented in those that attempt suicide (Arensman et al 1995) or repeatedly attempt suicide (Osváth et al. 2003) as compared to the general population. Resource substitution theory might suggest that education improves well-being more for women, as socioeconomic disadvantage increases dependence upon education for the protection of well-being (Ross and Mirowsky 2006). However, in another study (Zhang et al. 2005), the odds of suicide attempt were higher for males who were low-income, and females with low levels of education had odds up to 3.5 times greater for suicide attempts. Thus, the protective nature of SES remains somewhat unclear.

The Present Study

This study aims to incorporate the analysis of socioeconomic status in order to provide context to the association that sexual minority status and minority stress have with the outcomes of suicidal ideation and attempted suicide. Analyzing differences in the protective nature of socioeconomic status may have against suicidal outcomes may assist in the examination of the impact minority stress has on disparate outcomes of lethal self-injury, and the mechanisms by which sexual minority individuals in particular might be disproportionally represented in suicide statistics.

Taken together, I hypothesize that disparate outcomes of suicidal ideation and attempted suicide will persist for sexual minority individuals when accounting for socioeconomic status.

Methods

In this study, I draw upon data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), a four-wave prospective study of a nationally representative sample of youth as they transition from junior high and high school to adulthood. Less sensitive sections of the questionnaire were administered by computer assisted personal interview (CAPI), whereas sensitive questionnaire sections were administered using computer-assisted self-interview (CASI) technology, previously shown to improve quality self-reporting. Additional details of the Add Health study have been previously discussed and are available elsewhere (Harris 2013). For my analysis, I draw from Wave IV of the study (*n = 15,701),* though utilization of the public-use dataset and exclusion of cases with missing values reduced the actual sample used for regression analysis (*n = 4,106*).

Measures

Suicidal Ideation and Attempt

The primary outcome measures for this study were suicidal ideation and suicidal attempt. During the fourth wave of data collection, participants of the Add Health study were asked, "During the past 12 months, did you ever seriously think about committing suicide?" A binary indicator was created for this question and those that had seriously considered suicide were coded as 1 for this measure. During the questionnaire participants were also asked the follow up question: "During the past 12 months, how many times did you actually attempt suicide?" Those who reported that they had attempted suicide at least once were coded 1 on this binary indicator. These outcome measures, though related, are assessed separately to determine how individually impacted by sexual minority status and SES.

Sexual Minority Status

The primary predictor variable of this study is sexual minority status. In accordance with previous literature analyzing same-sex sexuality (Fu et al. 2019; Fasula et al. 2016) and other work utilizing data from the Add Health study (Kanazawa 2019) sexual minority status is measured utilizing three independent, though sometimes overlapping, indicators: (a) sexual identity, such as "gay" "bisexual" or "heterosexual" self-identification; (b) sexual attraction, such as self-reported sexual feelings, fantasies or desires; and (c) sexual behavior—with whom individuals actually interact in a sexual manner.

During the fourth wave of data collection, a series of questions was presented relating to sexual minority status. Regarding identity, participants were asked, "Please choose the description that best fits how you view yourself," and were asked to select their sexual identity from a list of five labels: "100% straight", "mostly straight", "bisexual", "mostly gay", or "100% gay." I excluded a small number of respondents who identified as asexual (n = 26), refused (n = 17), or selected the "don't know" option (n = 11). I constructed a binary indicator where sexual minority individuals, regardless of specific individual identity, are coded as 1. Regarding attraction, participants were asked both, "Have you ever had a romantic attraction to a female?" and, "Have you ever had a romantic attraction to a male?" I constructed a single binary measure of same-sex attraction where those attracted to individuals of the same sex assignment are coded as 1 and excluded those who refused (n = 24) or didn't know (n = 11). Regarding behavior, participants were asked both, "Considering all types of sexual activity, with how many female partners have you ever had sex?" and, "Considering all types of sexual activity, with how many male partners have you ever had sex?" I constructed an additional binary indicator where those

that have, even once, engaged in sexual behavior with individuals of the same sex assignment are coded as 1, and excluded those who refused (n = 156), or didn't know (n = 173).

Socioeconomic Status (SES)

Socioeconomic position was assessed using the proxy measure educational attainment because of its connection to social mobility (Haveman and Smeeding 2006) and a previously documented relationship with suicide outcomes in the literature (Pompili et al. 2013; Phillips and Hempstead 2017; Arensman et al 1995; Osváth et al. 2003). At wave four of the Add Health study participants were asked, "What is the highest level of education that you have achieved to date?" and provided with choices from 1 (8th grade or less) to 13 (completed professional education). I constructed a new indicator of (1) less than high school; (2) high school degree; (3) some college; (4) college degree; and (5) graduate degree. A single participant selected "don't know" and was excluded from the analysis.

Demographics

I considered race/ethnicity (categorized into "white", "Black/African American", "Hispanic/Latino", "Asian/Pacific Islander", or "other"). I also considered respondent birth-assigned sex, as was relevant for the construction of sexual minority indicators, assigned as 0 for male and 1 for female.

Analytic Strategy

Data analysis was performed using STATA/SE 16. Survey weighting and clustering were controlled for using STATA procedures as recommended by Add Health analysis guidelines to account for complex sample design and ensure that results are nationally representative (Chen and Mullen Harris 2020). Logistic regression was used to estimate odds ratios and 95%

confidence intervals for associations between predictor variables (sexual minority identity, sexual minority attraction, sexual minority behavior, educational attainment as a proxy measure of SES), outcome measures (suicidal ideation and attempted suicide), and demographic controls (race and sex). To assess the general protective effect of SES on suicidal ideation and suicidal attempt, preliminary logit models (1 and 3) do not include indicators of sexual minority status. Logit Models 2 and 4 assess the effects of sexual minority status in addition to socioeconomic status on the outcome measures, and all three indicators of SMS are included. Both models include measures of race/ethnicity and sex to control for the anticipated possible effects of racism, ethnocentrism, and/or sexism.

Results

Weighted descriptive statistics for all utilized measures are presented in the Appendix (see Table 1). Overall, only 7% had seriously considered suicide in the prior 12 months and only 1% had actually made an attempt. 14% reported an identity that was not strictly heterosexual. However, only 7% report at least one instance of attraction to someone of the same sex assigned at birth, and only 4% had at least one instance of a sexual relationship with someone of the same assigned sex, considering all types of sexual activity. In terms of educational attainment, 8% had not completed high school, followed by 18% with a high school degree, 39% with some college, 23% with a college degree, and 11% with a graduate degree. Regarding racial and ethnic identities, 64% identified as white, 21% identified as Black or African American, 11% as Hispanic or Latino, 3% as Asian or Pacific Islander, and 1% as some other identity. Additionally, 52% and 48% were assigned the male and female sexes at birth, respectively.

[Insert Table 1]

As a preliminary analysis, the bivariate relationships between each of the independent and dependent variables was tested. Variable intercorrelations are available in the correlation matrix in the Appendix (see Table 2). As expected, each of the three indicators for sexual minority status (identity, attraction, and behavior) was significantly correlated with suicidal ideation ($p < 0.01$), as was educational attainment ($p < 0.01$). Education ($p < 0.01$), sexual minority identity ($p < 0.05$), and sexual minority attraction ($p < 0.1$) were significantly correlated with recent suicide attempt. Educational attainment was also significantly correlated with sexual minority attraction ($p < 0.05$) and behavior ($p < 0.1$), but not identity. In addition, respondent race/ethnicity was significantly correlated with educational attainment ($p < 0.01$). Finally, sex assigned at birth was significantly correlated with sexual minority identity, attraction and behavior ($p < 0.01$), educational attainment ($p < 0.01$), and suicidal ideation ($p < 0.05$).

Expectedly, each of the three indicators of sexual minority status was also significantly correlated with the other two ($p < 0.01$). I tested for multicollinearity using STATA collinearity diagnostic procedures and the variance inflation factor indicated that corrective measures need not be taken within the logistic regression models.

[Insert Table 2]

Results from regression analyses, weighted in accordance with guidelines for analyzing Add Health data (Chen and Mullen Harris 2020), are presented as odds ratios with 95% confidence intervals in Table 3 of the Appendix. Model 1 shows results of a model for suicidal ideation as measured at Wave IV of the study and demonstrates that educational attainment was, in general, significantly protective of suicidal ideation when controlling for race and sex. As compared to those with less than a high school education, those with some college education were 0.65 times as likely to have seriously considered suicide in the prior 12 months (95% CI

0.42-1.00, $p < 0.1$). Additional education was increasingly protective of the outcome; those with a college degree were 0.38 times as likely (95% CI 0.23-0.63, $p < 0.01$) and those with a graduate degree were 0.28 times as likely (95% CI 0.14-0.56, $p < 0.01$) to have considered suicide. The outcome was also significantly associated with sex assigned at birth; those who were female were 1.54 times as likely (95% CI 1.11-2.14, $p < 0.05$) to have seriously considered suicide as compared to those who were male. A high school degree was not significantly protective as compared to the referent group.

Model 2 is adjusted for sexual minority identity, attraction, and behavior, the primary predictor variables, and controls for race or ethnicity and sex. In this model some college-level education was not significantly protective of suicidal ideation. Those with a college degree were 0.41 times as likely (95% CI 0.24-0.70, $p < 0.01$) and those with a graduate degree were 0.32 times as likely (95% CI 0.16-0.67) to have seriously considered suicide than someone with less than high school, a slight increase in odds from regression Model 1. Also in Model 2, while accounting for educational attainment, sexual minority status is positively associated with suicidal ideation. Specifically, those of a sexual minority self-identity were 1.87 times more likely (95% CI 1.03-3.39, $p < 0.05$), and those that had experienced sexual minority attraction were 2.17 times more likely (95% CI 1.09-4.34, $p < 0.05$) to have seriously considered suicide in the 12 months prior than a person of the sexual majority. Previous participation in sexual minority behavior was not found to be significantly associated. Taken together, this suggests that sexual minority status may be more strongly associated with suicidal ideation than education is protective of it.

Model 3 shows results of a logistic regression model for attempted suicide within the last 12 months as measured at Wave IV of the study. In Model 3, the odds of attempted suicide had a

significant negative association with educational attainment. As compared to those with less than high school, those with a high school degree (OR = 0.42, 95% CI 0.19-0.90, $p < 0.05$), some college education (OR = 0.18, 95% CI 0.08-0.40, $p < 0.01$), college degree (OR = 0.08, 95% CI 0.03-0.20, $p < 0.01$), or graduate degree (OR = 0.15, 95% CI 0.05-0.49, $p < 0.01$) were less likely to have attempted suicide at least once in the prior 12 months. Notably, those identifying as Black or African American were 2.32 times as likely (95% CI 1.21-4.43, $p < 0.05$) as compared to those who were white. The results from this model suggest that educational attainment hold explanatory power in examining SES and the effects it may exert on the likelihood of attempted suicide.

Model 4 is adjusted for measures of sexual minority identity, attraction, and behavior, and demonstrates that, net of controls for race or ethnicity and sex, one indicator of sexual minority status has a significant positive association with attempted suicide. Overall, increases in educational attainment remained generally protective of the outcome. As compared to those with less than high school, those with a high school degree (OR = 0.41, 95% CI 0.17-0.99, $p < 0.05$), some college (OR = 0.18, 95% CI 0.08-0.42, $p < 0.01$), a college degree (OR = 0.07, 95% CI 0.02-0.19, $p < 0.01$), or graduate degree (OR = 0.13, 95% CI 0.03-0.50, $p < 0.01$) were all significantly less likely to have recently attempted suicide. However, those self-identified as sexual minority individuals were 2.96 times more likely (95% CI 1.28-6.82, $p < 0.05$) to have one or more suicide attempts in the 12 months prior, when accounting for educational attainment. Individuals who are Black or African American were again at an increased risk of attempted suicide in the model (OR = 2.49, 95% CI 1.25-4.95, $p < 0.05$). Neither the experience of sexual minority attraction nor participation in sexual minority behavior were associated with the outcome.

[Insert Table 3]

Discussion

It was hypothesized that individuals of sexual minority status would be subject to increased risk of suicidal ideation and attempted suicide, while accounting for the effects of socioeconomic status. Suicidal ideation was found to have a significant association with both sexual minority status and educational attainment, the proxy measure for socioeconomic status, though the relationship between three separate indicators was somewhat nuanced. With and without adjustment for sexual minority status, increases in education were associated with decreases in the odds of seriously considering suicide as compared to those with less than a high school education, though the protective effects were somewhat decreased with adjustment for SMS. The strength of positive associations sexual minority self-identification and sexual minority attraction are found to have with suicidal ideation outweigh the identified protective effects increased educational attainment, and therefore socioeconomic status, may provide. Suicide attempt was also found to have a significant association with educational attainment, regardless of adjustment for SMS. Sexual minority self-identification was the only SMS indicator found to have a significant association with likelihood of suicide attempt, showing non-heterosexually identifying individuals to experience higher odds of the outcome.

Drawing comparison between the experiences of sexual minority individuals and their sexual majority counterparts is crucial for understanding the role of minority stress processes and the ways in which their effects contribute to disparities in suicide outcomes. These findings are consistent with research showing that sexual minority individuals experience greater risk of suicide outcomes (Fergusson et al. 2005; Haas et al. 2010; Russel 2003; Silenzio et al. 2007). Empirical evidence validates the minority stress hypothesis suggesting that non-heterosexual

individuals are specifically vulnerable to mental health issues, and decreased quality of life (Meyer 2003). These findings are somewhat incongruent with the work of Rich and colleagues (1986) who came to the conclusion that lesbian, gay, and bisexual populations are not at an increased risk of completed suicide, though this assessment is somewhat explained by Mościcki who previously concluded that the suicide attempt and suicide completion have a spurious correlation (1994).

This study also yielded results indicating the protective nature of socioeconomic status, congruent with some previous research. McGarrity found individuals of low-SES to be more vulnerable to the negative effects of discrimination, thus concluding that SES is contextually relevant when analyzing the effects of minority stress and/or health outcomes for lesbian, gay, and bisexual individuals. Results of the current study are consistent with the findings of Pirkis and colleagues (2017) who concluded that low socioeconomic position heightened the risk of suicidal ideation, and that individual socioeconomic position in particular exerted a significant effect on the outcome. Considerably less literature examines how the protective effects of SES are distributed across a measure of sexual orientation. The present study contributes a more contextual outlook into the association of SES and the outcomes of suicidal ideation and behavior while incorporating indicators of sexual minority status, a necessity indicated by its general absence in the literature.

This study is limited by secondary data analysis. One benefit of the Add Health study is its longitudinal design and relevance for studying the life course and utilizing a single wave of the study limits the current study to one of cross-sectional analysis. In addition, inability to contribute to the survey design hinders the ability to provide thorough measurement of sexual minority status, utilize a measure of gender rather than sex assigned at birth, and assess

stratification in the effects exerted on specific sexual minority sub-populations. Utilizing a binary approach to measuring sexual minority indicators such as identity restricts the accuracy of the study, thus becomes necessary future research assessing sexual minority indicators and risk of suicide outcomes for a more complete explanation of the identified effects.

Conclusion

Sexual minority individuals who identify as and/or experience attraction indicating such were found to experience heightened risk of suicide outcomes in comparison to the strictly heterosexual majority, though participation in sexual minority behavior was not found to be independently associated. Socioeconomic status, measured using educational attainment, was found to be protective of suicide outcomes, though the extent of this protection is reduced when accounting for the aforementioned indicators of sexual minority status. These findings highlight the importance of continued suicide research regarding the sexual minority. Additional research is necessary for the exploration of possible intervention to address sexual minority group-level disparity.

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Appendix 1

Table 1: Descriptive Statistics (N = 4106)

	n	Mean	Freq.	Range
Dependent Variables				
Suicidal Ideation	4106	.07		0-1
Attempted Suicide	4106	.01		0-1
Independent Variables				
Sexual Minority Identity	4106	.14		0-1
Sexual Minority Attraction	4106	.07		0-1
Sexual Minority Behavior	4106	.04		0-1
Respondent Education	4106			
Less than High School		.08	341	
High School Degree		.18	758	
Some College		.39	1595	
College Degree		.23	975	
Graduate Degree		.11	437	
Respondent Race/Ethnicity	4106			
White		.64	2608	
Black/African American		.21	877	
Hispanic/Latino		.11	429	
Asian/Pacific Islander		.03	128	
Other		.01	64	
Respondent Assigned Sex	4106	.55		0-1

Notes: Weighted descriptive statistics for study variables from Wave IV of the National Longitudinal Study of Adolescent to Adult Health (Add Health)

Table 2: Weighted Correlation Matrix

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Attempted Suicide (1)	1.000							
Suicidal Ideation (2)	0.231***	1.000						
Sexual Minority Identity (3)	0.076**	0.134***	1.000					
Sexual Minority Attraction (4)	0.065*	0.145***	0.601***	1.000				
Sexual Minority Behavior (5)	0.022	0.081***	0.278***	0.188***	1.000			
Respondent Education (6)	-0.077***	-0.071***	0.015	-0.044**	-0.035*	1.000		
Respondent Race/Ethnicity (7)	0.008	-0.007	-0.003	0.027	-0.003	-0.059***	1.000	
Respondent Assigned Sex (8)	0.030	0.042**	0.183***	0.093***	0.126***	0.130***	-0.034	1.000

Notes: Weighted correlations and significance for study variables from Wave IV of the National Longitudinal Study of Adolescent to Adult Health (Add Health)

*** p<0.01, ** p<0.05, * p<0.10

Table 3: Regression Odds Ratios for Suicide Outcome Measures (95% CI)

VARIABLES	Suicidal Ideation		Attempted Suicide	
	Model 1	Model 2	Model 3	Model 4
Sexual Minority Identity	-	**1.87**** (1.03-3.39)	-	**2.96**** (1.28-6.82)
Sexual Minority Attraction	-	**2.17**** (1.09-4.34)	-	1.05 (0.33-3.32)
Sexual Minority Behavior	-	1.53 (0.75-3.13)	-	0.75 (0.22-2.52)
Respondent Education				
Less than High School (referent)				
High School Degree	0.64 (0.35-1.15)	0.66 (0.35-1.23)	**0.42**** (0.19-0.90)	**0.41**** (0.17-0.99)
Some College	**0.65*** (0.42-1.00)	0.68 (0.42-1.10)	**0.18***** (0.08-0.40)	**0.18***** (0.08-0.42)
College Degree	**0.38***** (0.23-0.63)	**0.41***** (0.24-0.70)	**0.08***** (0.03-0.20)	**0.07***** (0.02-0.19)
Graduate Degree	**0.28***** (0.14-0.56)	**0.32***** (0.16-0.67)	**0.15***** (0.05-0.49)	**0.13***** (0.03-0.50)
Respondent Race/Ethnicity				
White (referent)				
Black/African American	0.93 (0.58-1.49)	1.05 (0.66-1.66)	**2.32**** (1.21-4.43)	**2.49**** (1.25-4.95)
Hispanic/Latino	0.77 (0.44-1.34)	0.74 (0.39-1.39)	1.33 (0.53-3.36)	1.30 (0.50-3.38)
Asian/Pacific Islander	0.86 (0.32-2.28)	0.89 (0.32-2.50)	(no obs.)	(no obs.)
Other	1.91 (0.66-5.48)	2.24 (0.84-5.99)	(no obs.)	(no obs.)
Respondent Assigned Sex *(f)*	**1.54**** (1.11-2.14)	1.20 (0.86-1.69)	1.23 (0.65-2.32)	0.98 (0.47-2.03)
Models 1 & 3 are unadjusted				
Models 2 & 4 are adjusted for indicators of sexual minority status				

Notes: Weighted logistic regression models for study variables from Wave IV of the National Longitudinal Study of Adolescent to Adult Health (Add Health). Standard errors in parenthesis.

*** p<0.01, ** p<0.05, * p<0.10